

Critical Area Stabilization

Description

Critical area stabilization is stabilizing areas which are highly susceptible to erosion by implementing one or more vegetative or structural BMPs. For the purposes of this BMP, critical areas include areas with highly erodible soils, long or steep slopes, droughty soils, excessively wet soils, soils that are very acidic or alkaline, slopes immediately adjacent to waterbodies or wetlands, fill areas and areas subject to concentrated flows.

Other Terms Used to Describe

High-Risk Erosion Areas
Critical Area Seeding

Pollutants Controlled and Impacts

Protecting critical areas is one of the most effective means of preventing sediment from entering surface waters. Properly established vegetation used to protect critical areas will also help absorb nutrients and reduce flows from steep slopes.

Application

Land Use

Applicable to all land uses.

Soil/Topography/Climate

This practice is particularly important on soils that are excessively wet, droughty, or which are subject to erosion even during a light to moderate rainfall.

When to Apply

Critical erosion areas should be identified during the planning stages of the project or proposed earth change activity. All possible measures should be taken not to disturb these areas. If it is necessary to disturb these areas, attention should be given to protecting them immediately.

Where to Apply

Apply on any area which is difficult to stabilize.

Relationship With Other BMPs

See the "Specifications" section, below.

Specifications

Planning Considerations:

For vegetative practices:

1. All critical areas should be protected from pedestrian access using Construction Barriers.
2. If possible, divert concentrated flows away from critical areas, at least until the vegetation is established. Follow specifications in the Diversions BMP.
3. Select and apply seed and legumes according to specifications in the Seeding BMP. Be sure to select plant species which are tolerant to the site condition.
4. Mulching should be done on seeded areas according to specifications in the Mulching BMP.
5. Sodding should be done according to the Sodding BMP to stabilize areas quickly. Rows of sod can be alternated with rows of seeded areas to stabilize the area more quickly.
6. Dune/sand areas should be stabilized following specifications in the Dune/Sand Stabilization BMP.
7. Trees, shrubs and ground covers should be selected and planted based on the Trees, Shrubs and Ground Covers BMP. Note that Soil Conservation Service soil surveys include species of trees, shrubs and ground covers that work well in each soil texture.

For structural practices:

1. Consider using Grade Stabilization Structures to take concentrated flows from one elevation to the other.
2. Consider using Riprap on slopes adjacent to watercourses and wetlands, and Slope/Shoreline Stabilization on steep slopes and slopes adjacent to cut and fill slopes. The Slope/Shoreline Stabilization BMP includes information on seawalls/retaining walls, revetments, and gabions.
3. Consider using terraces or benches to slow runoff velocities.
4. Consider using Buffer/Filter Strips to control erosion resulting from sheet flow.
5. Subsurface Drains may be needed where water movement may cause seeps or soil slippage. Grassed Waterways may need to be tiled to ensure the vegetation is established.

Site Preparation:

For vegetative practices:

1. Soil tests should be done to determine the nutrient and pH content of the soil. Depending on the results of soil tests, Soil Management may be necessary to adjust the soil pH to between 6.5 and 7.0 (for most conditions). All soil deficiencies should be addressed following the Soil Management specifications.
2. Follow the site preparation sections in the BMPs being used for vegetative establishment.

For structural practices:

Follow the procedures in the selected BMP.

Design and Implementation:

The proper design and implementation of all BMPs used to stabilize critical areas should be done according to the specifications in the selected BMPs.

Maintenance**For vegetative practices:**

Periodic inspections should be scheduled to ensure the vegetation is maturing correctly and staying in place.

Once the vegetation is well established:

1. Consideration should be given to removing Construction Barriers. In some areas, it may be beneficial to leave the barriers in place.
2. Vegetation should continue to be watered, when appropriate, to a depth of 1 inch into the sod bed. Water uniformly. See the Lawn Maintenance BMP.
3. Vegetation should be mowed according to its intended use. Follow the mowing specifications in the Lawn Maintenance BMP.
4. Soil testing should be done periodically to determine if the soil requires additional fertilizer or lime. Follow specifications in the Soil Management BMP.
5. Pesticides should only be used following specifications in the Pesticide Management BMP.
6. Spot Seeding should be done as needed on small damaged areas.

For structural practices:

Follow maintenance procedures in the "Maintenance" section of each structural BMP.